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EXAMINER	
MEEK, JACOB M	

ART UNIT	PAPER NUMBER
2637	

DATE MAILED: 10/08/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/896,479	MARU, TSUGUO	
	Examiner	Art Unit	
	Jacob Meek	2637	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *29 June 2001*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1 - 32* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1,2,4 - 7, 9 - 12, 15 -17,20,21,23,25,27,29-32* is/are rejected.

7)☒ Claim(s) *3, 8, 13,14,18,19,22,24,26,28* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☒ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *29 June 2001* is/are: a)☐ accepted or b)☒ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date *5,6,8,9*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Drawings

1. The drawings are objected to because handwritten labeling of drawings.

2. The drawings are objected to under 37 CFR 1.83(a) because they fail to show inputs to the weighting processor (Fig. 1, 106) as described in the specification (page 14, lines 4 – 7). Any structural detail that is essential for a proper understanding of the disclosed invention should be shown in the drawing. MPEP § 608.02(d). Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. The replacement sheet(s) should be labeled "Replacement Sheet" in the page header (as per 37 CFR 1.84(c)) so as not to obstruct any portion of the drawing figures. If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Claim Objections

3. Claims 1, 6, 11, 16, 21, 23, 25, 27, 29, 30, 31, 32 are objected to because of the following informalities: Claim's preamble recite the limitation "*carries out closed-loop control to electric power of a data transmitter*", which is interpreted by examiner to mean closed-loop

of transmit power of transmitter, electric power being interpreted as directly affecting the transmit power level. It may be beneficial to rewrite this claim to more accurately reflect its operation and intended effect. Appropriate correction is required.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

4. Claims 1, 2, 4, 5, 6, 7, 9, 10, 11, 12, 15, 16, 17, 20, 21, 23, 25, 27, 29 - 32 are rejected under 35 U.S.C. 103(a) as being unpatentable over Schulist et al (US Patent 6,542,558) in view of Hladik et al(US Patent 6,192,501).

With regard to Claim 1, Schulist teaches a method of weighting reverse-diffused, received data (see Figure 3, ref 105 and Column 5, lines 47 – 53 and Column 6, line 56 – column 7, line 5), based on both signal to interference ratio (SNR, signal to noise ratio being equivalent to SIR, signal to interference ratio) and data obtained when SIR is measured. Schulist also teaches the closed loop control of transmitter power (see Figure 3, 120, 125 and Column 5, lines 34 – 46). Schulist is silent about the details of turbo decoder operation. In a similar field of endeavor Hladik teaches carrying out ACS or comparison/selection operation in a process of alpha metric, beta metric and computing likelihoods (see Figures 3 and 4, and Column 7, lines 12 – 42). Hladik also teaches a method for compensating for results of ACS operation based on a predetermined value (hard decoding, see Column 7, line 58 – 64). It would have been obvious to one of ordinary skill in the art at the time of invention to utilize this turbo decoding technique in Schulist to provide a high performance decoding system.

With regard to Claim 2, Schulist in view of Hladik teaches the limitations of Claim 1 plus Schulist teaches a method that calculates SNR on a per time slot basis (see Column 1, line 60 – column 2, line 20).

With regard to claim 4, Schulist in view of Hladik teaches the limitations of Claim 1. Schulist is silent about the details of the turbo decoding operation with respect to compare / select operation. Hladik teaches turbo decoding using the comparison /selection operation (See Figure 7, 163, 166, 168, 170,) and results are compensated for by means of a logic circuit and outputs a known value (Figure 7, 172, 174, 176 and column11, lines 11 - 13). It would have been obvious to one of ordinary skill in the art at the time of invention to utilize this turbo decoding architecture in Schulist to provide a high performance decoding system.

With regard to claim 5, Schulist in view of Hladik teaches the limitations of Claim 1. Schulist teaches that SNR calculation is performed in firmware (see Column 6, lines 21 – 29). Hladik teaches that decoding is carried out through hardware (see column 11, lines 6 – 18). It would have been obvious to one of ordinary skill in the art at the time of invention to utilize the turbo decoding technique of Hladik in Schulist to provide a high performance decoding system.

With regard to Claim 6, limitations (a) and (b) are taught in Claim 1 above. Hladik teaches the additional limitation of at least one of process updating alpha metric, beta metric and computing likelihood based on ACS operation (See Figure 3, connector D for loop). It would have been obvious to one of ordinary skill in the art at the time of invention to utilize this turbo decoding technique in Schulist to provide a high performance decoding system. Dependent claims of claim 6 are identical to dependent claims of claim 1.

With regard to Claim 7, Schulist in view of Hladik teaches the limitations of Claim 6 plus Schulist teaches a method calculates SNR on a per time slot basis (see Column 1, line 60 – column 2, line 20).

With regard to claim 9, Schulist in view of Hladik teaches the limitations of Claim 6. Schulist is silent about the details of the turbo decoding operation with respect to compare / select operation. Hladik teaches the comparison /selection operation (See Figure 7, 163, 166, 168, 170,) and results are compensated for by means of a logic circuit and outputs a known value (Figure 7, 172, 174, 176 and column11, lines 11 - 13). It would have been obvious to one of ordinary skill in the art at the time of invention to utilize this turbo decoding architecture in Schulist to provide a high performance decoding system.

With regard to claim 10, Schulist in view of Hladik teaches the limitations of Claim 6. Schulist teaches that SNR calculation is performed in firmware (see Column 6, lines 21 – 29). Hladik teaches that decoding is carried out through hardware (see column 11, lines 6 – 18). It would have been obvious to one of ordinary skill in the art at the time of invention to utilize the turbo decoding technique of Hladik in Schulist to provide a high performance decoding system.

With regard to Claim 11, Schulist teaches a receiver compromising a power controller for weighting reverse-diffused, received data (see Figure 3, ref 120), based on both signal to interference ratio (SNR, signal to noise ratio being equivalent to SIR, signal to interference ratio) and data obtained when SIR is measured (see Figure 3, 115). Schulist also teaches the closed loop control of transmitter power (see Figure 3, 120, 125 and Column 5, lines 34 – 46). Schulist is silent about the details of turbo decoder operation. In a similar field of endeavor Hladik teaches carrying out ACS or comparison/selection operation in a process of alpha metric, beta metric and computing likelihoods (see Figures 3 and 4, and Column 7,

lines 12 – 42). Hladik also teaches a decoder for compensating for results of ACS operation based on a predetermined value (hard decoding, see Column 7, line 58 – 64). It would have been obvious to one of ordinary skill in the art at the time of invention to utilize this turbo decoding technique in Schulist to provide a high performance decoding system.

With regard to Claim 12, Schulist teaches the limitations of Claim 11 plus Schulist teaches that his receiver calculates SNR on a per time slot basis (see Column 1, line 60 – column 2, line 20).

With regard to claim 15, Schulist in view of Hladik teaches the limitations of Claim 11. Schulist teaches that SNR calculation is performed in firmware (see Column 6, lines 21 – 29). Hladik teaches that decoding is carried out through hardware (see column 11, lines 6 – 18). It would have been obvious to one of ordinary skill in the art at the time of invention to utilize this turbo decoding technique in Schulist to provide a high performance decoding system.

With regard to Claim 16, limitation (a) is taught in Claim 11 above. Hladik teaches the additional limitation of at least one of process updating alpha metric, beta metric and computing likelihood based on ACS operation (See Figure 3, connector D for loop). It would have been obvious to one of ordinary skill in the art at the time of invention to utilize this turbo decoding technique in Schulist to provide a high performance decoding system. Dependent claims of claim 16 are identical to dependent claims of claim 11.

With regard to Claim 17, Schulist in view of Hladik teaches the limitations of Claim 11 plus Schulist teaches that his receiver calculates SNR on a per time slot basis (see Column 1, line 60 – column 2, line 20).

With regard to claim 20, Schulist in view of Hladik teaches the limitations of Claim 16. Schulist teaches that SNR calculation is performed in firmware (see Column 6, lines 21 – 29). Hladik teaches that decoding is carried out through hardware (see column 11, lines 6 – 18).

It would have been obvious to one of ordinary skill in the art at the time of invention to utilize this turbo decoding technique in Schulist to provide a high performance decoding system.

With regard to Claim 21, Schulist in view of Hladik teaches the limitations of the receiver in Claim 11. The turbo encoder is taught by Hladik in Figure 5 and shown used in conjunction with the decoder. It would have been obvious to one of ordinary skill in the art at the time of invention to utilize this turbo encoding technique in conjunction with the receiver as taught by Schulist and Hladik to provide a high performance CDMA system.

With regard to Claim 23, Schulist in view of Hladik teaches the limitations of the receiver in claim 16. The turbo encoder is taught by Hladik in Figure 5 and shown used in conjunction with the decoder. It would have been obvious to one of ordinary skill in the art at the time of invention to utilize this turbo encoding technique in conjunction with the receiver as taught by Schulist and Hladik to provide a high performance CDMA system.

With regard to Claim 25, Schulist in view of Hladik teaches the limitations of the receiver in claim 11. The turbo encoder is taught by Hladik in Figure 5 and shown used in conjunction with the decoder. It would have been obvious to one of ordinary skill in the art at the time of invention to utilize this turbo encoding technique in conjunction with the receiver as taught by Schulist and Hladik to provide a high performance CDMA system.

With regard to Claim 27, Schulist in view of Hladik teaches the limitations of the receiver in claim 16. The turbo encoder is taught by Hladik in Figure 5 and shown used in conjunction with the decoder. It would have been obvious to one of ordinary skill in the art at the time of invention to utilize this turbo encoding technique in conjunction with the receiver as taught by Schulist and Hladik to provide a high performance CDMA system.

With regard to Claim 29, this program is taught in the method of Claim 1.

With regard to Claim 30, this program is taught by the method of Claim 6.

With regard to Claim 31, this program is taught by the receiver of Claim 11.

With regard to Claim 32, this program is taught by the receiver of Claim 16.

Allowable Subject Matter

5. Claims 3, 8, 13, 14, 18, 19, 22, 24, 26, 28 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Conclusion

6. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Bender et al (US Patent 6,556,549) teaches a power control technique for a CDMA system, Van Stralen et al (US Patent 6,304,996) teaches the details of a turbo decoder implementation and both appear closely related to applicant's field of endeavor.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jacob Meek whose telephone number is (571)272-3013. The examiner can normally be reached on 8:00 - 4:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jay Patel can be reached on (571)272-2988. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

JMM

JAYANTI PATEL
SUPERVISORY PATENT EXAMINER